47th Annual
Student Research Conference

WKU REACH 2017

Research Experiences And Creative Heights

Saturday, March 25, 2017
Downing Student Union

Western Kentucky University
Bowling Green, Kentucky

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CONFERENCE SCHEDULE

7:00 am – 2:00 pm **Student and Judge Registration**
DSU 3rd Floor Lobby
ongoing throughout the day
register at least 30 minutes before session

8:10 am – 9:40 am **Concurrent Morning Sessions I** *pages 12-19*

Sessions 1-11 Oral Papers | Presentations
Rooms 2084, 2085, 2086, 2122, 2123, 2124, 3002, 3004, 3005, 3006, 3007

Sessions 12-20 Posters
Room 3024

9:40 am – 9:50 am **Morning Break**

9:50 am – 10:50 am **Conference Keynote**
Sigma Xi Distinguished Lecture
Dr. Karen Oates
"Science in the Public Interest"
DSU Auditorium (1st floor)

10:50 am – 11:00 am **Morning Break II**

11:00 am – 12:30 pm **Concurrent Morning Sessions II** *pages 20-26*

Sessions 21-31 Oral Papers | Presentations
Rooms 2084, 2085, 2086, 2122, 2123, 2124, 3002, 3004, 3005, 3006, 3007

Sessions 32-40 Posters
Room 3024

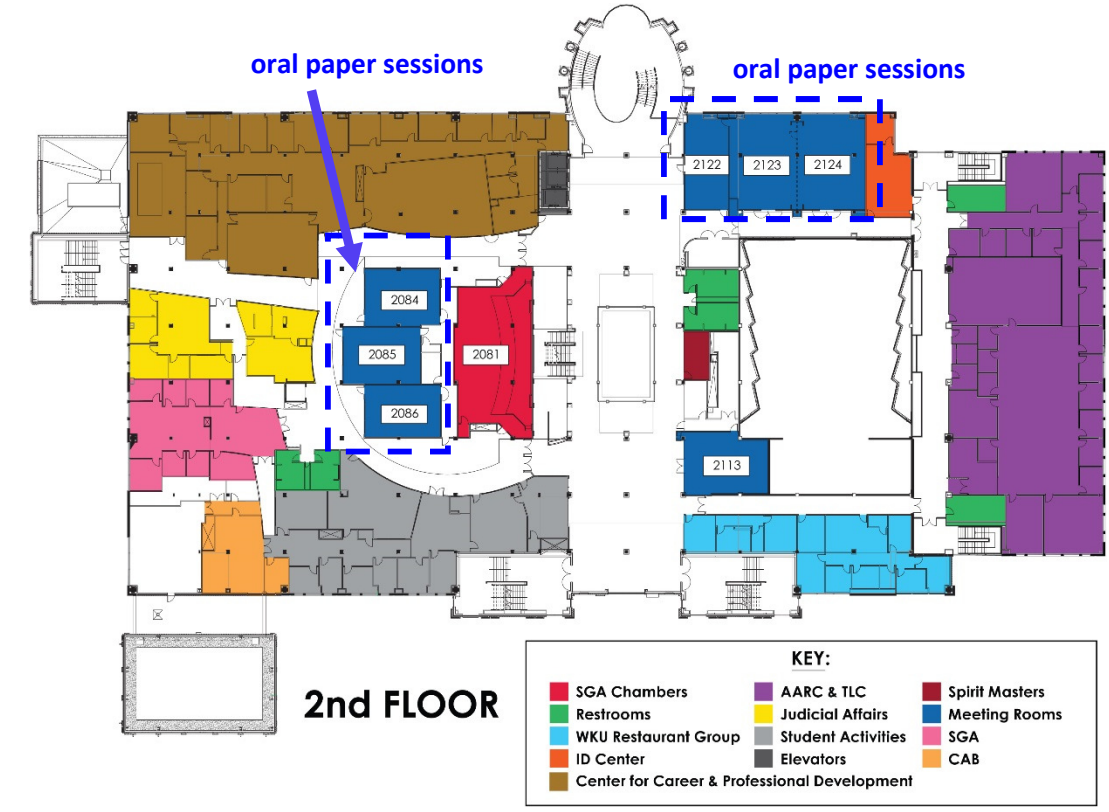
12:30 – 1:30 pm **Lunch Break--** *Presenters and judges receive free lunch ticket for Fresh Food Company at registration*

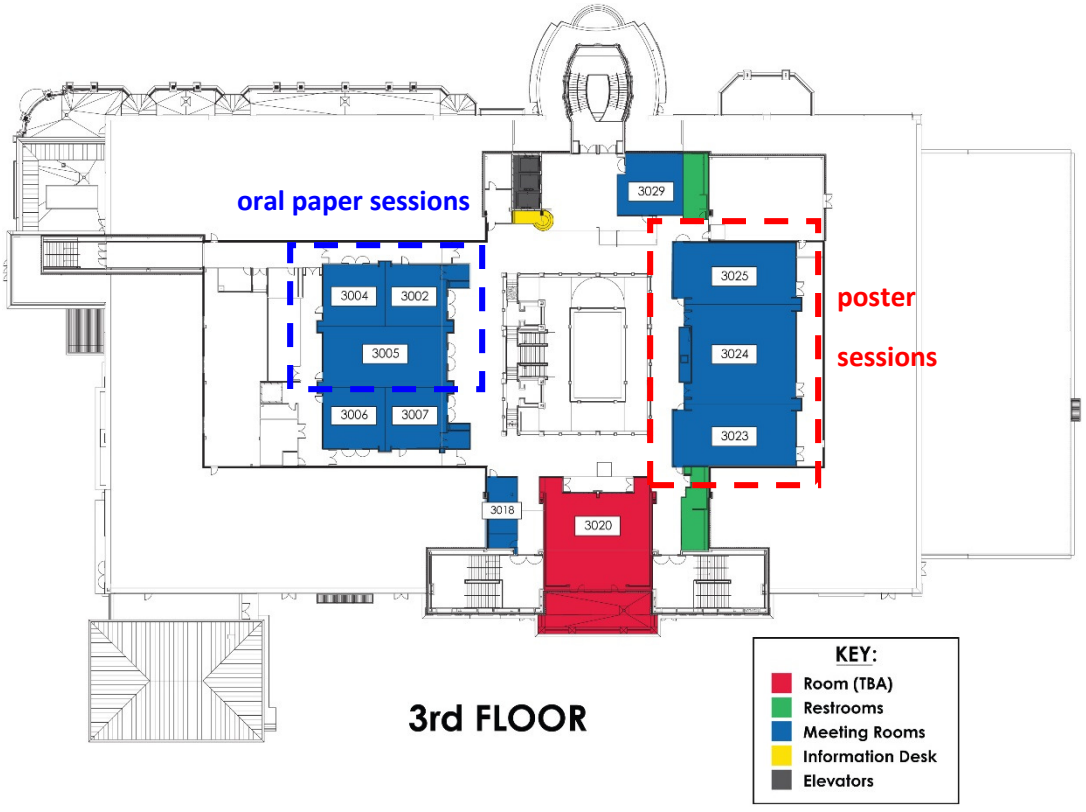
1:40 – 3:10 pm **Concurrent Afternoon Sessions** *pages 27-33*

Sessions 41-50 Oral Papers | Presentations | Performances
Rooms 2084, 2085, 2086, 2122, 2123, 2124, 3002, 3004, 3005, 3006

Sessions 51-59 Posters
Room 3024

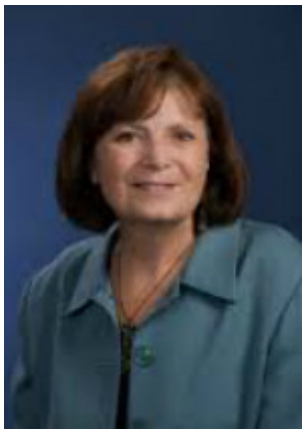
DOWNING STUDENT UNION FLOOR PLANS





SIGMA XI DISTINGUISHED LECTURE

Keynote Address of the WKU Student Research Conference



Dr. Karen Oates
Science in the Public Interest
9:50 - 10:50 am
Downing Student Union Auditorium

Abstract of address: Almost every policy decision—from the work of homeowners' associations, to the passing of new town ordinances, to the type of food in our school cafeterias—has a science and policy base. Every one of our college and university students will become a community citizen, making decisions that affect the lives of those in their communities. This session looks at the preparation we could give those students to allow them to participate in decision making by utilizing a scientific world view. We answer the question, what do we need to teach our students in order to create participatory citizens who understand and can utilize the power of scientific and analytical thinking and know its limitations? Understanding is form following function. Science teaching should be consistent with the nature of science. Teaching science as an inert, passive exercise in nomenclature and taxonomy will only yield citizens who can neither transfer scientific knowledge nor understand the nature of it. We explore how to move from an environment which is inert to one which is active and participatory.

Bio: Dr. Karen Kashmanian Oates is a nationally recognized scientist, science educator, and higher education leader. She is a Professor of Biochemistry and the Dean of Arts & Sciences at Worcester Polytechnic Institute (WPI). Dr. Oates received her B.S. in Biology from Rochester Institute of Technology and her Ph.D. in Biochemistry from The George Washington University. Among the honors she has received was induction as a fellow into the prestigious American Association for the Advancement of Science. She is a former deputy director for undergraduate education at the National Science Foundation.

At WPI, Dr. Oates oversees seven academic departments (Biology, Chemistry, Physics, Mathematics, Computer Science, Humanities & Arts and Social Sciences & Policy Studies), as well as several interdisciplinary programs including Environmental and Sustainability studies, Robotics and Interactive Media and Game Development. Dr. Oates's more recent interests and publications have centered on women's health, faculty development, service learning, business-higher education partnerships, and K-12 science and mathematics education.

CONFERENCE INTRODUCTION

The WKU Student Research Conference showcases scholarly activities of graduate and undergraduate students of diverse disciplines from across the main and regional campuses. An annual tradition since 1970, the conference has provided opportunities for thousands of students to present papers, performances, posters, exhibits, and displays on their research and creative endeavors.

Scholarly activity is original and creative work that is shared with colleagues and the general public. Research is a form of scholarly activity that involves the discovery of new knowledge. Other forms of scholarship include the development of new technologies, methods, materials or uses; the integration of knowledge that leads to new understanding; and artistry that creates new insights and interpretations.* As demonstrated by the Student Research Conference, students significantly enrich their academic experiences at WKU by engaging in scholarly activity.

HISTORY OF CONFERENCE

WKU has a rich history of scholarly engagement of students. Between 1970 and 2002, the WKU Chapter of Sigma Xi organized and funded the WKU Student Research Conference. Sigma Xi is a national research honor society of scientists and engineers that recognizes scientific achievement. The society is a diverse organization of members and chapters dedicated to companionship in science and engineering and advancement of knowledge through research, teaching, and service. For the next three years, the conference was jointly sponsored and organized by Sigma Xi and the University Honors Program. In 2006, WKU hosted a weekend-long celebration of student scholarship that included the Potter College Undergraduate Conference on Friday and the annual WKU Student Research Conference on Saturday, the latter again sponsored by Sigma Xi and the University Honors Program. The following year, a special committee composed of representatives of each college, the University Honors Program, and Sigma Xi organized a single conference. In 2006-2007 Sigma Xi and the Office of the Provost provided financial support for the conference.

In 2008 Provost Barbara Burch created the Student Research Council, a university-wide committee charged with promoting student scholarly activity on campus and organizing the annual student conference. Since that year, the Student Research Council has organized the annual Student Research Conference, with financial support provided by the WKU Chapter of Sigma Xi, the Office of the Provost, the Office of Research and Creative Activity, and other university units. With support from the Office of the Provost and the Office of Research, in 2012 the Student Research Council developed a weeklong celebration of student scholarship called REACH (Research Experiences and Creative Heights) Week. This year REACH is coordinated by the Office of Research and Creative Activity and spans the entire spring semester, highlighting student and faculty scholarship at events hosted by various WKU colleges and units. The 47th Annual Student Research Conference is a major university-wide event of REACH.

* Weiser, C. J. (1996, March 7) The Value System of a University: Rethinking Scholarship. Retrieved 30 November 2010 at www.adec.edu/clemson/papers/weiser.html.

CONFERENCE HIGHLIGHTS

The 47th Annual WKU Student Research Conference showcases 335 research and creative projects. There are 153 posters and exhibits, 177 oral papers, four performances, and one video. A total of 401 students are presenters and co-presenters at the conference, including 314 undergraduate students, 82 master's students, and five doctoral students. An index of presenters is provided at the end of this program. In addition, 66 other graduate and undergraduate students are co-authors on the papers and posters presented this year.

The interdisciplinary nature of the conference is evident in the broad range of subject areas covered in the presentations. Student participants represent diverse disciplines from 43 schools, departments, programs, and institutes in all colleges.

African American Studies
Agriculture
Architectural & Manufacturing Sciences
Art
Biochemistry
Biology
Chemistry
Communication
Communication Sciences & Disorders
Computer Science
Diversity & Community Studies
Economics
Engineering
English
Family & Consumer Sciences
Film
Finance
Folk Studies & Anthropology
Gender & Women's Studies
Geography & Geology
Gerontology
Health Sciences
History
Information Systems
Journalism & Broadcasting
Kinesiology, Recreation & Sport
Marketing
Mathematics
Modern Languages
Music
Nursing
Philosophy
Physical Therapy
Physics & Astronomy
Political Science
Popular Culture
Psychological Sciences
Psychology
Public Health
Social Work
Sociology
Teacher Education
Theatre & Dance

CONFERENCE ORGANIZATION AND SESSION WINNERS

The 335 research and creative projects presented at the conference are organized into 59 graduate and undergraduate sessions with five-to-six students in each session. Students are grouped into sessions by the subject areas of their projects: natural sciences, social sciences and education, health and human services, humanities, business, and interdisciplinary.

WKU faculty, professional staff, retired faculty and staff, WKU alumni, as well as members of the community at large, evaluate student presentations at the conference. The judges select

one winner from each of the sessions listed in this program. Session winners will be announced on the Student Research Council website at www.wku.edu/studentresearch by Monday, March 27. Winners will receive award certificates via their mentors, and all students will receive judges' feedback via their mentors after the conference.

ACKNOWLEDGEMENTS

On behalf of the entire campus community, the WKU Student Research Council extends appreciation and congratulations to the hundreds of students participating in the conference. We applaud your talent, creativity, dedication, and commitment to making the most of your educational experience at WKU. Your passion for learning and academic excellence, as well as your motivation to meet and overcome challenges, not only distinguishes you from your peers, it serves as an inspiration to others. We are proud of your accomplishments, and you should be too.

WKU faculty and staff who have supervised the students on their research and creative projects are referred to as "mentors" and are identified parenthetically in the detailed session listings on pages 12-34. A total of 148 faculty and staff served as mentors on the projects presented at this year's conference. We commend the mentors for their support of student scholarly activities and for their assistance in preparing students for the conference.

Listed below are the WKU faculty, staff, retired faculty and staff, WKU alumni, and local community members who are serving as judges at this year's conference. We greatly appreciate the assistance of the judges and thank them for volunteering. A number of judges are veterans who have supported the conference for years or decades.

Shahnaz Aly
Farhad Ashrafzadeh
Melanie Autin
Sameer Badarudeen
Leslie Baylis
Adriana Bitoun
Brent Björkman
Lauren Bland
Laura Bohuski
Barbara Brindle
Jennifer Brinkley
Angela Byrd
Cameron Carr-Calvert
Wei Chen
Ismail Civelek
Brian Coutts
Daniel Curry
Robert Davis
Xiuhua Ding
Richard Dressler
Ali Er
Timothy Evans
Jim Fulkerson
Simon Funge
Amanda Funk
Cecile Garmon
Jennifer Gill
Jean Gumirakiza
Sanju Gupta
Lance Hahn
Jennifer Hanley
Tony Harkins
Whitney Harper
Tim Hawkins
Anne Heintzman
Gail Hiles
Lawrence Hill
Jean-Luc Houle
Cindy Houston
Sandra Hughes
Jooyeon Hwang
Nezam Iraniparast
Kumi Ishii
Trish Jaggers
Jonathan Jeffrey
Jennifer Joe
Donna Kasznel
Susan Keesey
Molly Kerby
Jae Kim
Soyeon Kim
Rodney King
Cheryl Kirby-Stokes
Elisabeth Knight
George Kontos
Sonia Lenk
Diane Lickenbrock
Yi Shiuan Lin
Jill Maples
Sara McCaslin
Lauren McCoy
Amy McGough
Andrew Mienaltowski
Christian Montgomery
Sara Moody
Matthew Nee

Stephen Norris
Beth Norris
Anne Onyekwuluje
Melanie Richter
Claire Rinehart
Audrey Robinson-Nkongola
Amelia Rollings
Naomi Rowland
Mark Schafer
Todd Seguin
Brenna Sherrill
Devesh Shukla
Allison Sircy
Michael Smith
Alex Sorrels
Roxanne Spencer
Helen Sterk
Michael Stokes
Martin Stone
Antonia Szymanski
Rostern Tembo
Shannon Vaughan
Sara Volpi
Carol Watwood
Aaron Wichman
Kevin Williams
Lee Winchester
Mary Wolinski

Funding for the 47th Annual WKU Student Research Conference and other REACH activities was provided by the Office of the Provost and Vice President for Academic Affairs, the Office of Research and Creative Activity, and the WKU Chapter of Sigma Xi.

Special thanks go to the WKU Development and Alumni Relations division for providing awards for each session winner. For the first time at the WKU Student Research Conference, the winning student presenter from each of the 59 sessions will receive a $50 gift card to the WKU Store. This new initiative was coordinated by Marc Archambault and Ron Wilson. These gift cards will be delivered along with the award certificates in the days after the conference via the students' mentors.

The WKU Graduate School provides grants to graduate students to support scholarship that promotes inquiry and contributions to knowledge. A number of the graduate students presenting today were assisted by funding from the Graduate School.

A variety of funding opportunities are available to assist students with their research. In 2012 the Office of the Provost and Vice President for Academic Affairs and the Office of Research and Creative Activity initiated an internal funding program for undergraduate students called Faculty-Undergraduate Student Engagement (FUSE) grants. FUSE grants are designed to support students' intellectual development by fostering active engagement in the areas of research, creative and scholarly activities, and/or artistic performances. Over 500 undergraduate students have received FUSE grants since the inception of the FUSE grant, many of whom are among the conference participants this year.

Amy Bingham DeCesare, Bryan Lemon, Clinton Lewis, Tom Meacham, Tommy Newton, Bob Skipper, and the WKU Office of Public Affairs staff provided vital assistance with electronic advertising, press releases, photography, conference artwork design, and a *View from the Hill* video segment. We appreciate the support of Will Hoagland at the *College Heights Herald*.

Diana Keeling provided expert database support to the Student Research Council.

WKU faculty members Lance Hahn, Rodney King, Leila Watkins, and Leyla Zhuhadar organized and presented informative professional development workshops for students in advance of the conference.

The Downing Student Union staff at WKU provided logistical support for the conference. WKU Dining prepared lunch in the Fresh Food Company, and WKU Catering provided refreshment support in our judges' deliberation room.

The WKU Student Research Council organizes the conference. Membership is composed of a representative from each of the following units: academic colleges, Student Government Association (SGA), Sigma Xi, University Libraries, University Senate, Honors College, Gatton Academy, and the Graduate School. Members are Darlene Applegate, Simran Banga, Colette Chelf, Cheryl Davis, Mariah Hughes, Xiaoxia "Silvie" Huang, April McCauley, Rosemary Meszaros, Kim Newell, Morteza Nurcheshmeh, Merrall Price, Derick B. Strode (chair), Rachel Tinius, Candice Tope-Phillips, and Leila Watkins. For more information about the Council, visit www.wku.edu/studentresearch. The Council sincerely appreciates the students, faculty, staff, and community members who contributed to the great success of this interdisciplinary conference, as well as the friends and family members who attended the event.

Explanation of Session Listings

The program includes details for each session in the following order: presenter, co-presenters (as applicable), co-authors (as applicable), the session title, and the mentor for a project. Each WKU student was permitted to serve as the primary presenter on one presentation at the conference. Up to three co-presenters and up to six co-authors could also be listed. A sample is shown below to illustrate the form.

Sample

Presenter Last Name, First Name; Co-presenter 1 Last Name, First Name; Co-author Last Name, First Name; "Title of a Great Presentation" (Mentor First Name Last Name)

CONCURRENT MORNING SESSIONS I

8:10 – 9:40 am

Session 1 Room 2084 Graduate Papers, Health and Human Services
Judges: Jill Maples (moderator), Lee Winchester, Mark Schafer

8:10 **Willenbrink, Elizabeth**; Mallinger, Gayle; Kerby, Molly; Musalia, Martha; "Cultivating Community: Food Insecurity and Community Gardening Among African Refugees in Bowling Green, Kentucky" (Gayle Mallinger)
8:25 **Chen, Yu-Hsuan** "Investigating the Influence of the Transition from High School into College Life on Dietary Pattern Among College Students at Western Kentucky University" (Colin Farrell)
8:40 **Ascensio, Zona** "Pharmacy-Based Barriers to Adolescent Access to Emergency Contraception in Kentucky" (Darlene Shearer)
8:55 **Taylor, Chelsea** "The Effects of Sexual Abuse on Body Image of Members of the United States Military" (Rick Grieve)
9:10 **Ezekekwu, Emmanuel**; Mkanta, William; Chumbler, Neale; "An Examination of the Likelihood of Home Discharge After General Hospitalizations among Medicaid Recipients" (William Mkanta)

Session 2 Room 2085 Graduate Papers, Humanities
Judges: Cecile Garmon (moderator), Timothy Evans

8:10 **Rodriguez, Emily** "Born With a Veil: A Supernatural Family History through Oral Tradition" (Ann Ferrell)
8:25 **Krawec, Jessica** "The Tanuki's A-meiji-ing Transformation: An Examination of Role-swapping in a Meiji Era Folktale" (Ann Ferrell)
8:40 **Spalding, Shelley** "A Quiet Genocide: Female Infanticide and the Case for Inclusion" (Marko Dumančić)
8:55 **Biggs, Austin** "The SBC in Crisis: A Collision of Worldviews" (Tamara Van Dyken)
9:10 **Upshur, Elizabeth; Haydon, David;** "Literary Conjuring: Uncovering, Researching, and Revisualizing the Landscape of Black Women Writers from 1601-1920" (Christopher Lewis)

Session 3 Room 2086 Graduate Papers, Natural Sciences
Judges: Sanju Gupta (moderator), Jean-Luc Houle

8:10 **Kholikov, Khomidkhodzha**; Seyitliyev, Dovletgeldi; Smith, Skyler; Thomas, Zachary; "Graphene Quantum Dot Synthesis Using Nanosecond Laser Pulses" (Ali Oguz Er)
8:25 **Jones, Konnor**; Nee, Matthew; "Temperature and Electric Field Dependence of Asymmetric Stretching Of Nitrate Ion" (Matthew Nee)

8:40 Polapally, Mamatha "Synthesis, Structure and Properties of Metal Organic Frameworks" (Bangbo Yan)
8:55 Jackson, Leah; Polk, Jason; "Epikarst Hydrogeochemical Processes in Telogenetic Karst Systems in South-Central Kentucky" (Jason Polk)
9:10 Tuladhar, Anisha; Polk, Jason; Thorsteinsson, Thorsteinn; "Improving Watershed Understanding In the Arctic through A Comparative Hydrogeochemical Analysis of Icelandic Glacial Meltwater" (Jason Polk)
9:25 Smith, Amelia; Philips, Keith; "Documentation and Analysis of the Camel-Humped Spider Beetle *Dignomus*" (Keith Philips)

Session 4 Room 2122 Graduate Papers, Interdisciplinary
Judges: Jim Fulkerson (moderator), Brent Björkman

8:10 McGill, Jacqueline; Oregon, Evie; "Senior Woman Administrator: Barriers, Challenges, and Opportunities" (Evie Oregon)
8:25 Mahmood, Towhid "Improving Water Quality through Land Retirement: Evidence from Green River Conservation Reserve Enhancement Program (CREP)" (Stephen Locke)
8:40 Park, Jeyun "Communication Issues in Multinational Organizations" (Kumi Ishii)
8:55 Muller, Chloe "The Failing Fight For Universal Paid Family Leave" (Molly Kerby)
9:10 Hughes, Bonnie Susanne "Antonín Dvořák: The Slavonic Dances, 1841 – 1904" (Ann Ferrell)
9:25 Russell, Jim "Legacy of the Crusades" (Juan Romero)

Session 5 Room 2123 Undergraduate Papers, Humanities
Judges: Jonathan Jeffrey (moderator), Todd Seguin, Sara McCaslin

8:10 Coughenour, Brent "Character, ASL, and Marlee Matlin: Representation of the Deaf On-Screen" (Jerod Hollyfield)
8:25 Hilger, Ashley "Incarcerated: Liberty and Justice for None" (Andrew Rosa)
8:40 No presentation (Break)
8:55 Nellans, Lillian "Patriarchy Weaponized: Sexual Violence amidst Armed Conflict" (Patricia Minter)
9:10 Dalton, Gared "A Dagger through the Heartland: The Louisville & Nashville Railroad In the Civil War" (Glenn LaFantasie)
9:25 Linder, Ellen "Reassessing Post-Apartheid South Africa: An Analysis of the Truth and Reconciliation Commission and Reparations" (Patricia Minter)

Session 6 Room 2124 Undergraduate Papers, Humanities
Judges: Jennifer Hanley (moderator), Cameron Carr-Calvert, Amelia Rollings

8:10 Gruber, Brittney "They: The Best Gender Neutral Pronoun" (Elizabeth Winkler)
8:25 Houchens, Logan "Hidden WKU: Abstract Photography as a Tool of Discovery" (Ted Hovet)
8:40 Nauert, Jr., Kenneth "Redefining the Roles of Women and Sexual Ethics in the Roman Catholic Church" (Elizabeth Gish)

8:55 Meyers, Jon "For Now We See in a Mirror Darkly: Cultural Reflections Found in the Films of Busby Berkeley" (Jerod Hollyfield)
9:10 Edens, Nicholas "The Independent Internet: Streaming Media's Rising Golden Age." (Jerod Hollyfield)
9:25 Schilling, John "The Emergence of Film Propaganda" (Jerod Hollyfield)

Session 7 Room 3002 Undergraduate Papers, Natural Sciences
Judges: Robert Davis (moderator), Amy McGough

8:10 Wong, Chi Fai "Synoptic Mesoscale Aspects of a Winter Storm Associated with Soil Moisture" (Joshua Durkee)
8:25 Ronkainen, Millicent; King, Rodney; Baugh, Kimberly; Hamilton, Courtney; "Bacteriophage Mutants Capable of Growing On a Non-Permissive *Escherichia coli* Host" (Rodney King)
8:40 Hughes, Ruth; Huskey, Steve; Pedersen, Kristen; "The Kinematics of Envenomation by *Urobatis jamaicensis*" (Steve Huskey)
8:55 Wallace, Franklyn; Lamb, Ryan; "Modified Aqueous Substrates for Real-Time Reaction Monitoring Using Surface Enhanced Raman Spectroscopy" (Matthew Nee)
9:10 Moore, Brittiny "Bedrock Collapse Sinkhole Analysis in Bowling Green, Kentucky" (Patricia Kambesis)
9:25 Bowers, Isaac "Storm Chasing Across the Plains: An Experience Portfolio" (Joshua Durkee)

Session 8 Room 3004 Undergraduate Papers, Natural Sciences
Judges: Jennifer Gill (moderator), Ali Er

8:10 Baughn, Cayla "Sustainability and Season Extension: A Kentucky Case Study of Low Tunnels in Action" (Leslie North)
8:25 Schulz, Michael "The November 17, 2013 Midwestern and Southern Severe Weather Outbreak" (Joshua Durkee)
8:40 McShane, Kelli "Large-Scale Atmospheric Contributions to the Historic Winter Storm on January 31-February 2, 2011 across Northern Illinois" (Joshua Durkee)
8:55 Peveler, Kayla "The Molecular Evolution of the HEXA Gene in Regards to Tay-Sachs Disease" (Chandrakanth Emani)
9:10 White, William; Chidurala, Manohar; "Enhancing Student Learning with a Wind Tunnel" (Robert Choate)
9:25 Reece, Christopher "A Case Study of the Historic Kentucky Winter Storm of March 4th-5th, 2015" (Joshua Durkee)

Session 9 Room 3005 Undergraduate Papers, Natural Sciences
Judges: Claire Rinehart (moderator), Martin Stone

8:10 Losekamp, Katherine; Wulff, Andrew; "Geochemical and Mineralogic Characteristics of Lava Flows from the DGCA Volcanic Complex" (Andrew Wulff)

8:25 Cecil, Wendy "A Study of Mercury in Bald Eagle Feathers" (Cathleen Webb)
8:40 Husk, Mary "Molecular Evolution of App Gene in Alzheimer's Disease" (Chandrakanth Emani)
8:55 McDonald, Benjamin; Wulff, Andrew; "Analysis of a South-West U.S. Pluton" (Andrew Wulff)
9:10 Smith, Isaac "A Case Study of the Large-Scale Features That Contributed to the November 6, 2005 Evansville, Indiana Tornado" (Joshua Durkee)
9:25 Menix, Jacob "Using Computational Bayesian Statistics to Analyze Parameters in a Differential Equations Model" (Richard Schugart)

Session 10 Room 3006 Undergraduate Papers, Social Sciences and Education
Judges: Aaron Wichman (moderator), Antonia Szymanski

8:10 Green, Skyler; Spillman, Kirstin; Krueger, Merry; Krueger, Hannah; Coleman, Hollie; "Eating Disorders and Athletics" (Rick Grieve)
8:25 Dallas, John "The Effects of Parenting Relationships and Sports" (Helen Sterk)
8:40 Latham, Kate "Integrating Art into the Classroom: A Necessary Component of a Well-Rounded Education" (Janet Tassell)
8:55 No Presentation (Break)
9:10 Krueger, Merry; Jenkins, Andrea; Green, Skyler; Krueger, Hannah; Spillman, Kirstin; Coleman, Hollie; Goldener, Lauren; "Male Sexuality and Gender Conformation on the Drive for Thinness And Muscularity" (Frederick Grieve)
9:25 Luna, Katie; Lawrence, Keely; Cundiff, Meredith; Luecke, Kyle; "Ambiguity Leads to Context Processing in Predictive Learning" (Sharon Mutter)

Session 11 Room 3007 Undergraduate Papers, Interdisciplinary
Judges: Cheryl Kirby-Stokes (moderator), Sara Moody

8:10 Burgess, Kelly; Payne-Emerson, Heather; "Nutritional and Behavioral Repercussions of Food Insecurity and the Impact of Nutrition Education" (Karen Mason)
8:25 Allen, Laura "Intergenerational Living between College Students and Nursing Home Residents in a Global Context" (Dana Bradley)
8:40 Turner, Rachel; French, Rachel; "Using Mixed Effects Modeling to Quantify Differences between Patient Groups with Diabetic Foot Ulcers" (Richard Schugart)
8:55 Brown, Alec "Investigating the Student Enrollment Decision at WKU" (Melanie Autin)
9:10 Price, Kyle; Creteau, Tyler; Hennion, Ben; Albuhayri, Abdullah; "Alumineers Ingot Wash Station" (Morteza Nurcheshmeh)
9:25 Stryker, Stefan "Numerically Solving a System of PDES Modeling Chronic Wounds Treated with Oxygen Therapy" (Richard Schugart)

Session 12 Room 3024 Graduate Posters, Health and Human Services
Judges: Lauren Bland (moderator), Xiuhua Ding, Amanda Funk

1. **Chumbley, Allison; Watson, Chelsea;** Young, Sonia; VanWye, Ray; Norris, Beth; Vanarsdall, Natalie; Downing, Tate; Clayton, Morgen; "The Effect of Foot Orthotics and Whole Body Vibration (WBV) on Balance and Gross Motor Skills in Children with Down Syndrome" (Sonia Young)
2. **Clayton, Morgen; Downing, Tate; Vanarsdall, Natalie;** Young, Sonia; Norris, Elizabeth; Vanwye, Ray; Chumbley, Allison; Watson, Chelsea; "Effects of Foot Orthotics and Whole Body Vibration on Gait in Children with Down Syndrome" (Sonia Young)
3. **Adigarla, Sai Pavan**; Gray, Elmer; "Continued Longitudinal Studies of Family Size and its Relationship to the Human Sex Ratio" (Elmer Gray)
4. **Berger, Mollie** "Birth Plan Non-Adherence: Impact on Birth Satisfaction and Perceived Birth Trauma" (Marilyn Gardner)
5. **Olenick, Alyssa**; Pearson, Regis; Shaker, Nuha; Oregon, Evie; Tinius, Rachel; Blankenship, Maire; Maples, Jill; "Metabolic Flexibility among Women in Response to a Single High Fat Meal" (Jill Maples)

Session 13 Room 3024 Graduate Posters, Interdisciplinary
Judges: Naomi Rowland (moderator), Stephen Norris

6. **Ballentine, Michael**; Garcia, Marco; "Synthesis and Characterization of Semiconducting Nanoparticles" (Lawrence Hill)
7. **Patel, Dharmesh**; Malone, Jonathan; Kwong, Ka Wai; "Photochemical Generation and Kinetic Studies of High-Valent Iron-Oxo Porphyrins" (Rui Zhang)
8. **Berlanga, Jesus**; Nee, Matthew; "Kinetic Modeling of the Atmospheric Oxidation Pathways of Dimethyl Disulfide and Dimethyl Sulfide" (Matthew Nee)
9. **Steinmann, Hali** "A Geomorphological Investigation of Lithology, Structure, and Their Effects on Speleogenesis in the Pennington Formation, Savage Gulf State Natural Area, Tennessee" (Pat Kambesis)
10. **Ramsey, Haley**; McCrary, Elizabeth; Wichman, Aaron; "Self-Esteem Moderates Self-Descriptions under Insecurity Threat" (Aaron Wichman)

Session 14 Room 3024 Undergraduate Posters, Health and Human Services,
Judges: Jooyeon Hwang (moderator), Sameer Badarudeen

11. **Hesse, Caitlin**; Tinius, Rachel; Cooley, Bailey; Olenick, Alyssa; Blankenship, Maire; Hoover, Don; Maples, Jill; "Secondary Criteria for VO2max Testing among Pregnant Women" (Jill Maples)
12. **Henshaw, Presley; Ashley, Katherine;** "Resilience: The Road to Maximum Recovery Following Brain Injury" (Jean Neils-Strunjas)

13. **Moll, Sabrina; Menke, Brenna;** ; White, Mason; McDermott, Weston; Crandall, Jason; "Effects of Spine Align for Improving Flexibility in Male College Students: A Pilot Study" (Scott Arnett)
14. **McDaniel, Christopher**; Nugent, Jesse; "ACE Gene Methylation and Hypertension in a Cohort of East Africans" (Nancy Rice)
15. **Farmer, Angella** "Sexual Identity and the Patient-Nurse Relationship" (Kim Vickous)

Session 15 Room 3024 Undergraduate Posters, Humanities
Judges: Sonia Lenk (moderator), Brenna Sherrill

16. **Howlett, Josiah**; Howlett, Josiah; Rollings, Amelia; "The Short-Term Effects of Two Meal Choices on Perceptual and Acoustical Measures of the Singing Voice" (Amelia Rollings)
17. **Kendrick, Alissa** "Pepe the Frog: How a Popular Meme Turned into a Symbol of Minority Injustice" (Anthony Harkins)
18. **Anglea, Edward.** "The Smith Building: New Living in Old Louisville" (Neal Downing)
19. **Guthrie, Sarah** "From Beast to Beauty: A Prosthetic Quick Change Study" (Shura Pollatsek)
20. **Hoffman, Elizabeth** "Art behind the Scenes" (Marilee Salvator)

Session 16 Room 3024 Undergraduate Posters, Natural Sciences,
Judges: Melanie Richter (moderator), Alex Sorrels

21. **Yao, Lei** "Shopping Center of Jiu Ting Town" (Neal Downing)
22. **Dillingham, Megan**; Rowland, Naomi; King, Rodney; Rinehart, Claire; Staples, Amanda; "Phages of the Moon: The Changing Morphology of Lunahalos Plaques" (Naomi Rowland)
23. **Shelton, Dimond**; King, Rodney; "Discovery and Analysis of Mycobacteriophage Wachhund" (Rodney King)
24. **Khan, Sherafghan** "X-Ray Crystallography Analyses of an Antithyroid Compound: 1-methyl-2-mercaptoimidazole" (Edwin Stevens)
25. **Pendergrass, Stetson** "Brentwood Cutters" (Neal Downing)
26. **Byrd, Adam** "Warren County International Learning Center" (Neal Downing)

Session 17 Room 3024 Undergraduate Posters, Natural Sciences,
Judges: Michael Stokes (moderator), Lance Hahn

27. **Yang, QiXing** "Resort Hotel Design" (Neal Downing)
28. **McElroy, Eli** "Praised Paradise" (Neal Downing)
29. **Graham, James**; Bjarnadodóttir, Brynhildur; Kristjánsdóttir, Sigrun; Gunnlaugson, Olafur; Oddsdóttir, Embla; "Assessing the Functionality of a Campus Carbon Calculator in International Settings" (Leslie North)
30. **Urso, Olivia**; Carroll, Amber; King, Rodney; "Identifying Essential Viral Genes through Genomic Engineering" (Rodney King)

31. **Leigh, Taylor; Hall, Aaron; Budlove, Daniel; Ryle, Luke;** "Stuppworks: Girder Grinder" (Chris Byrne)
32. **Williams, Morganne** "Cepheids in Open Clusters" (Mike Carini)

Session 18 Room 3024 Undergraduate Posters, Natural Sciences,
Judges: Ismail Civelek (moderator), Adriana Bitoun

33. **Culton, Samuel** "Analysis of Seed Caching by Smith's Bush Squirrel in Balule Nature Reserve, South Africa" (Michael Stokes)
34. **Atici, Enes**; Srivastava, Ajay; "Hemocyte Development and Wound Healing in *Drosophila* - Assessing the Role of a Cathepsin L" (Ajay Srivastava)
35. **Mitchell, Logan**; McClanahan, Kegan; "An Analysis of the Lost River Karst Aquifer's Hydrometeorological Response to Storm Events" (Jason Polk)
36. **Millay, Matthew; Patty, Blaine;** Smith, Michael; Monroe, Jerry; "Investigating the Synergistic Effects of Two Curcuminoids and Cisplatin on Cancer Cell Migration and Auditory Tissue" (Michael Smith)
37. **Davis, Andrew** "Applying a Density-Dependent Leslie Matrix Model with Steady-State Distribution Control to Logistic Populations" (Bruce Kessler)
38. **Lawrence, Keely**; Luna, Catherine; "Predictive Learning of Stimuli Using Dot Probe Task" (Sharon Mutter)

Session 19 Room 3024 Undergraduate Posters, Social Sciences and Education
Judges: Molly Kerby (moderator), Shannon Vaughan

39. **Mauch, Jordan; French, Carrie;** Wininger, Steven; "Impact of Attempting to Multi-Task on Self-Selected Exercise Intensity" (Steven Wininger)
40. **Rinne, Allison** "Age Differences in Top-Down Processing of Emotional Faces Reflected in Early Fronto-Central Neural Activity" (Andrew Mienaltowski)
41. **Gregory, Jordan**; Ernst, Jasmine; Lemerise, Elizabeth; "How Does Classroom Context Affect Head Start Teachers' Use of Cognitively Challenging Talk?" (Elizabeth Lemerise)
42. **Ernst, Jasmine**; Gregory, Jordan; Lemerise, Elizabeth; "The Effects of Classroom Context on Head Start Teacher Feedback" (Elizabeth Lemerise)
43. **Penner, Matthew**; Ramsey, Haley; McCray, Elizabeth; Powers, Jeff; Wichman, Aaron; "Insecurity and Threat" (Aaron Wichman)

Session 20 Room 3024 Undergraduate Posters, Interdisciplinary
Judges: Andrew Mienaltowski (moderator), Gail Hiles

44. **Glasscock, Justin** "Bowling Green Children's Museum" (Neal Downing)
45. **Ward, Kaitlin** "Inclusive Design: An Evidence-Based Approach to Designing Low-Income Housing Communities" (Sheila Flener)
46. **Browning, Shelby** "Russellville Youth & Development Center" (Neal Downing)
47. **Rouse, Addie; Peterson, Paige;** Ashley, Noah; "'May the Adaptations Help Your Songbirds Fly in Favorable Conditions!'" (Martha Day)

48. **Cornelius, Christopher** "Boys and Girls Club Meet the Sustainable African Termites" (Neal Downing)
49. **Daugherty, Zechariah; Nickell, John;** "The Effect of Financial Literacy on Preventative Healthcare Usage" (Kam Chan)

BREAK

9:40 – 9:50 am

CONFERENCE KEYNOTE

9:50 – 10:50 am

Sigma Xi Distinguished Lecture

Dr. Karen Oates

Science in the Public Interest

DSU Auditorium (1st floor)

BREAK

10:50 – 11:00 am

CONCURRENT MORNING SESSIONS II

11:00 am – 12:30 pm

Session 21 Room 2084 Graduate Papers, Humanities
Judges: Sandra Hughes (moderator), Jonathan Jeffrey

11:00 **Knowles, Bryan** "John Robo Milton - Selected Poems" (Gillian Knoll)
11:15 **Pyatt, Susanna** "'Living by Design, Not by Default': Blogging Modesty & Biblical Femininity in the 21st Century" (Ann Ferrell)
11:30 **Rappaport, Anne** "The Village Healer is My Bartender" (Ann Ferrell)
11:45 **Brugh, Christopher** "'Desetha, Deseti, Disati, Diśati, Diś': A Philological Study on 'Preach' in Early Buddhism"" (Jeffrey Samuels)
12:00 **Jacobson, Sean** "American Public Memory of Mass Atrocities" (Marko Dumančić)

Session 22 Room 2085 Graduate Papers, Natural Sciences
Judges: Stephen Norris (moderator), Michael Smith

11:00 **Carrizosa, S.** "Scanning Electrochemical Microscopy of Electroactive Cobalt Oxide/Graphene Hybrids for Energy Storage Devices and Electrocatalytic Glucose Sensing" (Sanju Gupta)
11:15 **Gao, Hongyan** "Hierarchical Core-Shell Nanosheet Arrays with MnO_2 Grown on Mesoporous $CoFe_2O_4$ Support for High-Performance Asymmetric Supercapacitors" (Yan Cao)
11:30 **Scalf, Cassandra** "Transcriptomic Response to Immune Challenge in Zebra Finch (*Taeniopygia guttata*) using RNA-seq" (Noah Ashley)
11:45 **Von Hagen, R**; Schulte, Bruce; Mwangi, Githiru; Simon, Kasaine; Bernard, Amakobe; Urbanus, Mutwiwa; "An Exploration of Chili Pepper (Capsicum Spp.) Fences as a Crop Raiding Deterrent Method to Alleviate Human Elephant Conflict (HEC) in the Kasigau Wildlife Corridor, Kenya" (Bruce Schulte)
12:00 **Lee, Ngo Fung**; Ranburger, Davis; "Multiple Oxidation Pathways Observed for Manganese(v)-oxo Corroles Generated by Visible Light" (Rui Zhang)
12:15 **Amiri, Nasim** "Examination of LEED Certified Building's Electricity Usage" (Shahnaz Aly)

Session 23 Room 2086 Graduate Papers, Interdisciplinary
Judges: Anne Onyekwuluje (moderator), Wei Chen

11:00 **Devulapallivenkata, Lakshmi Narasimha** "Application of Huffman Data Compression Algorithm in Hashing Computation" (Mustafa Atici)
11:15 **Mayer, Matthew** "The Future of Accredited Zoos and Aquariums: Embracing Strategic Adaptation through Social Innovation and Sustainability" (Jane Olmsted)
11:30 **Forke, Cara** "A Prolegomena to Understanding Folk Art Environments" (Ann Ferrell)

11:45 **Clark, Terry** "Christian Doctrine and Slavery: A Question of Compatibility" (Ann Ferrell)
12:00 **Coates, Kyle** "Jesus People: Spiritual Entrepreneurs" (Tamara Van Dyken)
12:15 **Karimli, Nigar; Prasad, Ayush;** "Constructing an Optimal Design Method in a Mathematical Model for the Interactions of Matrix Metalloproteinases and their Inhibitors in a Wound" (Richard Schugart)

Session 24 Room 2122 Graduate Papers, Interdisciplinary
Judges: Tony Harkins (moderator), Allison Sircy

11:00 **Na-Yemeh, Dolly** "Geoprofiles and Data about Data" (Rezaul Mahmood)
11:15 **Carver, Krystal; Johnson, Samantha**; Turner, Ben; "Assessing the Community Impacts of Project Breaking Ground (A Sustainable Jail Garden and Food Justice Service-Learning Project)" (Nicole Breazeale)
11:30 **Bentley, Matthew**; May, Michael; "Geophysical Characterization of Mississippian Carbonates of South Central Kentucky and Northern Tennessee" (Michael May)
11:45 **Waite, Aldious** "Perception and Attitudes of Unlabeled Genetically Modified Foods of the WKU Faculty and Staff" (John Khouryieh)
12:00 **Musgrave, Nicole** "Engaging National Resources Locally: How Folklorists Can Leverage Federal Grants for Place-Based Advocacy Projects" (Brent Björkman)

Session 25 Room 2123 Undergraduate Papers, Humanities
Judges: Trish Jaggers (moderator), Amelia Rollings, Gail Hiles

11:00 **Brown, Drew** "Bromance Movies Champion Modern Masculinity" (Jerod Hollyfield)
11:15 **Bragdon, Dakota** "Make Your Way through the Fog, Little Hedgehog: A Formal Analysis of Soviet Animation from 1949-1979" (Jerod Hollyfield)
11:30 **Henderson, Andrew** "Journalism and Human Rights: From the Abolition of British Slavery to the AIDS Crisis and Injustices In-Between" (Patricia Minter)
11:45 **Wilkins, Katherine** "Disdaining Men and Oxygen: Providing Nonbinary Gender Representation in Creative Media" (Christopher Lewis)
12:00 **Blythe, Shaire** "Who's Really to Blame: Violence & Films" (Jerod Hollyfield)

Session 26 Room 2124 Undergraduate Papers, Humanities
Judges: Cameron Carr-Calvert (moderator), Brenna Sherrill

11:00 **Anderson, Jacob** "Southern Cinema" (Jerod Hollyfield)
11:15 **Mills, Tori** "Indie Darlings: The Significance of the Female Coming-of-Age Story in Independent Cinema" (Ted Hovet)
11:30 **Filiatreau, Laureen** "The Art of Celebration: An Analysis of Storytelling within Film and Theatre" (Jerod Hollyfield)
11:45 **Allen, Robert** "Abandoning 'Human Rights'" (Michael Seidler)
12:00 **Smith, Parker** "Black Drag" (Jerod Hollyfield)
12:15 **Scharhag, Shelton** “National Populism and the Rise of the AFD” (Laura McGee)

Session 27 Room 3002 Undergraduate Papers, Natural Sciences
Judges: Lance Hahn (moderator), Melanie Autin

11:00 **Froedge, Tom** "Mixed Valence Layered Vanadate Electrode for Rechargeable Batteries" (Bangbo Yan)
11:15 **Rone, Justin; Lasley, Nathan; Kercheville, Robb; Steele, Joshua;** "Design and Implementation of a Prototype Motorized Flag Flying System" (Robert Choate)
11:30 **Krempel, Mara; Moss, Hayley;** Khouryieh, Hanna; Griffin, Kristen; "Impact of Ionic Strength on the Physical and Creaming Stability of Whey Protein Stabilized Fish Oil-in-Water Emulsions" (Hanna Khouryieh)
11:45 **Towey, Charles**; Shukla, Devesh; "Medicago Truncatula and the TiO_2 Treatment Test" (Shivendra Sahi and Nilesh Sharma)
12:00 **Reilly, Mary Kirsten**; Philips, Keith; Bowen, Jacob; Daniels, Makenzie; Daugherty, Zechariah; "Dung Beetle Diversity in the Costa Rican Cloud Forest" (Keith Philips)
12:15 **Ranburger, Davis**; Lee, Ngo Fung; Kwong, Ka Wai; "Photochemical Studies of High Valent Manganese(iii)-oxo Corrole Species" (Rui Zhang)

Session 28 Room 3004 Undergraduate Papers, Natural Sciences
Judges: Devesh Shukla (moderator), Jennifer Gill

11:00 **Crowdus, Nathan** "Case Study of the January 22-24, 2016 Snowstorm across the Ohio Valley and Mid-Atlantic" (Joshua Durkee)
11:15 **Prince, Jared** "Monte Carlo Tree Search for Dots & Boxes" (Uta Ziegler)
11:30 **Schow, Tori** "Analysis of Large-Scale Atmospheric Features for Reported Tornadic Activity near Campo, Colorado" (Josh Durkee)
11:45 **Kanthawar, Arjun; Krishna, Nikhil;** "Uniquely Identifying Parameters in a Differential Equation Model using Practical Identifiability" (Richard Schugart)
12:00 **Baker, Alan**; Wulff, Andrew; "Understanding the Geology of the San Jose Mine Collapse" (Andrew Wulff)
12:15 **Docekal, Gregory** "The Large-Scale Atmospheric Conditions that Contributed to the Historic Atlanta Flood of 2009" (Josh Durkee)

Session 29 Room 3005 Undergraduate Papers, Natural Sciences
Judges: Rostern Tembo (moderator), Lawrence Hill

11:00 **Speer, Allison** "Finding the Function of Alpha Synuclein Protein" (Chandra Emani)
11:15 **Alam, Shaumik**; Kim, Moon-Soo; Brown, Audrey; Chung, Minsub; "Pathogen-Specific DNA Detection via Engineered Zinc-Finger Proteins" (Moon-Soo Kim)
11:30 **Hodzic, Denis**; Smith, Michael; Monroe, David; "Identifying Anti-Cancer and Otoprotective Synergisms between Cisplatin and Two Novel Curcuminoids" (Michael Smith)
11:45 **Larkin, Grant** "A Synoptic Reanalysis of the April 10th, 2009 Tornado Outbreak across Middle Tennessee" (Joshua Durkee)

12:00 Keith, Andrew "Analysis of Large-Scale Forcings that Led to the April 22, 2011 Tornado in St. Louis, Missouri" (Joshua Durkee)
12:15 Brumley, Jacob; Lienesch, Philip; "The Correlation between Madtom Biomass and Mussel Shell Distribution within the Green River in Kentucky" (Philip Lienesch)

Session 30 Room 3006 Undergraduate Papers, Social Sciences and Education
Judges: Kumi Ishii (moderator), Angela Byrd

11:00 Reed, Sarah "Governmental Trust in Haiti" (Timothy Rich)
11:15 Matsumoto, Mandy; Brown, Reagan; "An Investigation in the Accuracy of Parallel Analysis for Determining the Number of Factors in a Factor Analysis" (Reagan Brown)
11:30 Pease, Jacob "Safeguard Democracy: An Institutional Reform to Promote Republican Liberty" (Edward Yager)
11:45 Smith, Madalyn "Prison Programming and Recidivism as a Method of Social Bond Theory: A Meta-Analysis of Research from 2000 to 2015" (Holli Drummond)
12:00 Brown, Sarah "Company Stress Relief through Anonymous Employee Feedback" (Helen Sterk)
12:15 Price, Kassidy "Opportunity for Sex Education in Young Adult Literature" (Ted Hovet)

Session 31 Room 3007 Undergraduate Papers, Interdisciplinary
Judges: Donna Kasznel (moderator), Jae Kim

11:00 Bailey, Heather "Truth Today: A 21st Century Examination of Sojourner Truth's 'Ain't I A Woman' Speech" (Andrew Rosa)
11:15 Morton, Tevan "Black Sun Shines Light on Racism and Cultural Dissonance: An Analysis on Racism against African Americans in Film" (Jerod Holyfield)
11:30 Cobaugh, Tyler "PTSD Portrayal in Film" (Jerod Hollyfield)
11:45* Rennegarbe, Grayson "The Difficulty of Forgiveness" (Grayson Hunt)
12:00* Taylor, Logan; Rennegarbe, Grayson; Martin, Lucas; Renfro, Brooklyn; "Moral Resentment" (Grayson Hunt)
12:15* Renfro, Brooklyn; Rennegarbe, Grayson; Taylor, Logan; Martin, Lucas; "Why You Shouldn't Forgive" (Grayson Hunt)
***These three sessions were submitted as an organized symposium titled "Forgiveness and Resentment"**

Session 32 Room 3024 Graduate Posters, Health and Human Services
Judges: Barbara Brindle (moderator), Whitney Harper

1. **Vondy, Robert**; Schafer, Mark; Crandall, Jason; Lyons, Scott; Olenick, Alyssa; Blankenship, Lydia; Shaker, Nuha; "Evaluation of Sit-Stand Desktop Workstations in Sedentary Office Workers" (Mark Schafer)
2. **Khan, Nadia** "Some Economic Implications of Repealing the Affordable Care Act" (Dr. Gregory Ellis-Griffith)
3. **Shaker, Nuha**; Maples, Jill; Lyons, Scott; Noel, Christina; "Pharmacogenetics Study Among Children with Autism Spectrum Disorder" (Jill Maples)

4. **Thogaru, Sujaya** "Bone Mineral Density among Women in South Central Kentucky" (Matthew Hunt and Grace Lartey)
5. **Moledina, Zaiba**; Farrell, Colin; Ellis-Griffith, Gregory; "Effect of Health Insurance Status on Receiving Healthcare" (Colin Farrell)
6. **Wallace, Sara** "Acceptance and Commitment Therapy and the Body Project: A New Combined Intervention for Body Image and Mindfulness" (Rick Grieve)

Session 33 Room 3024 Graduate Posters, Interdisciplinary
Judges: Sara Volpi (moderator), Yi Shiuan Lin

7. **Sparks, Megan**; Duffin, Lisa; "Changing Pre-Service Teachers' Beliefs about Prevalent Brain-Based Myths in Education" (Lisa Duffin)
8. **Jones, Justin** "In Union Lies Strength: Facilitating Situation Awareness through Team Processes" (Betsy Shoenfelt)
9. **Do, Manh** "Green Cloud – Load Balancing, Load Consolidation and VM Migration" (Michael Galloway)
10. **Gade, Keertana Reddy** "Profile and Lessons Learned from Health Services in Zanzibar" (William Mkanta)
11. **Brown, Laysha**; McCoy, Lauren; Oregon, Evelyn; "Student-Athlete Activism - Where do We Go from Here?" (Lauren McCoy)

Session 34 Room 3024 Undergraduate Posters, Health and Human Services
Judges: Simon Funge (moderator), Richard Dressler

12. **Fickey, Hannah**; Maples, Jill; Blankenship, Maire; Cooley, Bailey; Olenick, Alyssa; Hoover, Donald; Cade, W. Todd; "The YMCA Submaximal Cycle Test and 6-Minute Walk Test are not Accurate Predictors of Cardiorespiratory Fitness during Mid-Pregnancy" (Rachel Tinius)
13. **Roland, Ezekiel**; Edens, Kolbi; Reisert, Katie; Saint, Paige; Schafer, Mark; Crandall, Jason; "The Effects of a Sit-Stand Workstation Intervention on Workday Psychological Stress in University Staff" (Jason Crandall)
14. **Adkins, Callie; Treon, John;** "The Effects Foster Care Independent Living Programs on Aging-Out Youth" (Whitney Harper)
15. **Moore, Lindsey** "Standing in the Way: Criminalizing Homelessness" (Whitney Harper)
16. **Hutson, Katie; Watkins, Chanel;** "Interfamilial Abuse: Effects on Social Development" (Whitney Harper)

Session 35 Room 3024 Undergraduate Posters, Natural Sciences
Judges: Cheryl Kirby-Stokes (moderator), Claire Rinehart

17. **Banaszak, Alexander**; Smith, Tyler; Gupta, Sanju; "Molecular Sensitivity and Selectivity of Metal Nanoparticles Decorated Graphene as 'Smart' Surface-Enhanced Raman Scattering (SERS) Platforms" (Sanju Gupta)

18. **Smith, Tyler**; Banaszak, A.; Gupta, Sanju; "Graphene Quantum Dots Electrochemistry and Development of Sensitive Electrochemical Biosensor" (Sanju Gupta)
19. **Evie, Hosannah**; Duke, Brooke; Williams, Kevin; Williams, Blairanne; "Cytotoxicity and Uptake of Platinum Compounds in Cancer Cell Lines" (Blairanne Williams)
20. **Evans, B.**; Henson, A.; Carrizosa, S.B.; Gupta, Sanju; "De-agglomeration of Detonation Nanodiamond via Salt-Assisted Ultrasonication and Surface Charge Determination using Advanced Electrochemistry" (Sanju Gupta)
21. **Heinze, Jeffrey** "Oasis Tower" (Neal Downing)
22. **Plummer, Erica; Thayer, Domnique;** Ashley, Noah; "Effects of Chemical Sympathectomy on Inflammatory Response to Sleep Loss in Mice" (Noah Ashley)

Session 36 Room 3024 Undergraduate Posters, Natural Sciences
Judges: Daniel Curry (moderator), Antonia Szymanski

23. **Gearner, Olivia** "Documentation and Conservation of Species of the Bizarre South African Endemic Genus *Meziomorphum* (Coleoptera: Ptinidae)" (Keith Philips)
24. **O'Connor, Brent** "The Irie: Cultural Center and Cafe" (Neal Downing)
25. **Sewalls, Harper**; Edwards, Sarah; "Computer Simulations of Conformations of Large Dynamic Proteins" (Sarah Edwards)
26. **Leibman, Noemi**; Hahn, Lance; "Impact of Deception on Writing Style" (Lance Hahn)
27. **Hickman, Thomas** "Woodford County Youth Center" (Neal Downing)
28. **Ramsey, Lydia** "Nature Family Community Center" (Neal Downing)

Session 37 Room 3024 Undergraduate Posters, Natural Sciences
Judges: Nezam Iraniparast (moderator), Jean Gumirakiza

29. **Phillips, Mallory; Cooper, Matthew; Zaleski, Ian; Ellis, Blake;** "ME 412 Berry Plastics Acoustics" (Robert Choate)
30. **Kwan, Henry** "Searching for New Blazars" (Michael Carini)
31. **Biddle, James**; Stone, Martin; Smith, Gordon; Weaver, Eric; "The Effect of Gravity Level Variation on the Growth Rate, Behavior, and Nutrient Uptake within a Crop of Sample Plants" (Martin Stone)
32. **Lamb, Ryan** "Use of Surface Enhanced Raman Spectroscopy in Monitoring Photocatalytic Reactions" (Matthew Nee)
33. **Steward, Kayla**; Nee, Matthew; "Degradation of Organic Pollutants with Buoyant Photocatalyst (Titanium Dioxide and Zinc Oxide)" (Matthew Nee)
34. **Perez, Meghan; Curry, Caleb;** King, Rodney; "Exploring Viral Diversity through the Comparison of Mycobacteriophages Squiggle and Trufflatree" (Rodney King)

Session 38 Room 3024 Undergraduate Posters, Natural Sciences
Judges: Farhad Ashrafzadeh (moderator), Matthew Nee

35. **Collins, Christopher** "Potential Energy Surfaces of Diatoms" (Jeremy Maddox)

36. **Conkright, Benjamin**; Gilliam, Olivia; "The Effect of Chemical Sympathectomy on Mouse Sleep Using Piezoelectric Technology" (Noah Ashley)
37. **Hamilton, Emily**; Smith, Michael; Huskey, Steve; "Substrate-Borne Communication in Chameleons: Do Vibrations Induce Behavioral Changes?" (Michael Smith)
38. **Aroh, Joseph** "Comparing the Deformation Rate of High Grade Metals" (Chris Byrne)
39. **Carver, Nicholas; Aroh, Joseph; Stewart, Patrick; Abuhulaigah, Ali**; Li, Jianwei; "The Design of an Autonomous Robot for the Spring 2017 IEEE Competition" (Ron Rizzo)
40. **Harney, Brent; Johnson, Veronica**; Rice, Nancy; "Colocalization of Phk γ-181 and Na-14 In Sh-sy5y Cells" (Nancy Rice)

Session 39 Room 3024 Undergraduate Posters, Social Sciences and Education
Judges: Christian Montgomery (moderator), Susan Keesey

41. **Trader, Elizabeth**; Zhao, Qin; "Cultural Differences in Responses to Self-Doubt" (Qin Zhao)
42. **Denhard, Chelsea**; Lickenbrock, Diane; "Associations between Parent Involvement, Infant Temperament, and Parent affect during Early Infancy" (Diane Lickenbrock)
43. **Wren, Buddy; Williams, Jamie;** Clayton, Krisstal; "What's Gender and Sexual Orientation Got to Do with It? Moral Attributions towards Herpes-Positive Targets" (Krisstal Clayton)
44. **Robertson, Hannah; Rouse, Addie; Coffman, Emilee; Robertson, Hannah;** "The Practice of Inquiry Instruction in STEM and the Power of Teacher Beliefs" (Lisa Duffin)
45. **Willis, Jennifer; Connor, Victoria;** "The Effect of Music Therapy on Stroke Patients Rehabilitation" (Krisstal Clayton)
46. **Granzow, Blair; Gomez, Jessica; Burton, Breanna; Ater, Taylor;** "Hate Crimes against Sexual Orientation: Characteristics of Those Who Report" (Whitney Harper)

Session 40 Room 3024 Undergraduate Posters, Interdisciplinary
Judges: Jim Fulkerson (moderator), Jennifer Joe

47. **Waddell, Aaron; Lam, Gavin; Tuttle, Nicholas;** "Logan Ingot Cleaning System in Logan Aluminum" (Morteza Nurcheshmeh)
48. **Businnah, Shaima** "Ibrahim Palace" (Neal Downing)
49. **Staggs, Chandler; Zieba, Daniela; Lee, Dustin;** "BioCloud: Using GPU Architecture for Bioinformatics Tools" (Michael Galloway)
50. **Zieba, Daniela**; Goulet, Christopher; "BioCloud Middleware" (Michael Galloway)
51. **Gordon, Garrett; Beane, Forrest; Wright, Skyler; Bullock, Chris;** "ME400 MTD Dyno Group" (Chris Byrne)
52. **Alobaid, Fares** "The Co-Existence of Divergent Spaces" (Neal Downing)

LUNCH BREAK

12:30 – 1:30 pm

CONCURRENT AFTERNOON SESSIONS III

1:40 – 3:10 pm

Session 41 Room 2084 Graduate Papers, Social Sciences and Education
Judges: Brian Coutts (moderator), Lauren McCoy

1:40 Buscaglia, Alexandra; Kuhlenschmidt, Sally; Clayton, Krisstal; Zhao, Qin; "The Effects of Assertiveness on Dating Initiations" (Sally Kuhlenschmidt)
1:55 Groh, Brittany "Emotion Detection Impacted by Expressive Intensity and Location in Peripheral Vision" (Andrew Mienaltowski)
2:10 Bailes, Lauren; Lickenbrock, Diane; "Examining Longitudinal Predictors of Parental Sensitivity: The Role of Parental Personality and Infant Temperament across Early Infancy" (Diane Lickenbrock)
2:25 Pearson, Joanna; Lickenbrock, Diane; "Associations between Parent Mind-Mindedness, Parent-Infant Affect, and Infant Emotion Regulation with Mothers" (Diane Lickenbrock)
2:40 No presentation (Break)
2:55 Tatebayashi, Mizuho "Intercultural Communication among Educators in a Multinational Environment" (Kumi Ishii)

Session 42 Room 2085 Graduate Papers, Natural Sciences
Judges: Leslie Baylis (moderator), Kevin Williams

1:40 Wang, Zexuan; Gani, Royhan; "Deep-Marine Sediment Waves in the Northern Gulf of Mexico" (Royhan Gani)
1:55 Seyitliyev, Dovletgeldi; Kholikov, Khomidkhodzha; Ilhom, Saidjafarzoda; Grant, Byron; Er, Ali; "One-Step Laser-Induced Hydrogen Generation from Coal and Coke Powders in Water" (Ali Er)
2:10 Ilhom, Saidjafarzoda; Kholikov, Khomidkhoidzha; Seyitliev, Dovletgeldi; Er, Ali Oguz; Grant, Bayron; "Laser Shock Wave Assisted Patterning on Niti Shape Memory Alloy Surfaces" (Ali Er)
2:25 No presentation (Break)
2:40 Flinchum, Dane; Dong, Qian; Srivastava, Ajay; "Characterizing the Role of Cp1 in *Drosophila melanogaster* and its Effects on Basement Membrane Degradation and Signaling" (Ajay Srivastava)
2:55 Winchester, Charles "Kinetic Studies of Organic Reductants with an Electron-Deficient Manganese(iv)-oxo Porphyrin" (Rui Zhang)

Session 43 Room 2086 Undergraduate Papers, Interdisciplinary
Judges: Jennifer Brinkley (moderator), Shahnaz Aly

1:40 Kamer, Mary; Gumirakiza, Dominique; "Comparing Financial Positions between Farms Using the Guidelines and Those Who Do Not" (Dominique Gumirakiza)
1:55 Russell, Summer "Retention in Higher Education Institutions: A Comprehensive Examination on SAT Scores, Endowments, and Admissions and their Effect on Institutional Growth" (Claudia Strow)
2:10 Skulsillapakorn, Kanyawee "#ReviewBowlingGreen: Food and Attractions Guide for International Students" (Morgan Moran)
2:25 Stewart, Hans "Where the Laughs Went" (Jerod Hollyfield)
2:40 Green, Steven "Perception towards Beef Industry and Willingness to Pay for Beef Products among Millennials in Kentucky" (Dominique Gumirakiza)
2:55 Dunbar, Tayshaun "Untitled" (Jerod Hollyfield)

Session 44 Room 2122 Undergraduate Papers, Humanities
Judges: Mary Wolinski (moderator), Laura Bohuski

1:40 Therrell, Grace "'Little Petty Places': Dante's *Inferno* and Complicated Women" (Alison Langdon)
1:55 No Presentation (Break)
2:10 Gunter, Benjamin "'What Did We Want to Be?' Nostalgia in Richard Linklater's *Boyhood*" (Jerod Hollyfield)
2:25 Mahoney, Rachel "There's No One I'd Rather Be than Me: An Analysis of Positive Minority Representation in *Wreck It Ralph*" (Jerod Hollyfield)
2:40 Burchett, Seth "Hard Times, Professional Wrestling, and a Look at Working Class Masculinity" (Jennifer Hanley)
2:55 Tucker, Lauren "Using Word Boxes to Improve Early Literacy Skills of At-Risk First Grade English Learners" (Susan Keesey)

Session 45 Room 2123 Undergraduate Papers, Humanities
Judges: Helen Sterk (moderator), Daniel Curry

1:40 Williams, Sydney "LGBT Representation in Independent Cinema" (Ted Hovet)
1:55 Taylor, Erin "Queer Women in Television" (Jerod Hollyfield)
2:10 Brock, Kelli "The Art of Post-Production" (Jerod Hollyfield)
2:25 No Presentation (Break)
2:40 Richey, Jay "Academic Freedom as a Human Right: The Problem of Confucius Institutes" (Patricia Minter)
2:55 Todd, Mollie "Functions, Forms, and Accessibility of English as a Second Language Courses in South-Central Kentucky" (Kate Hudepohl)

Session 46 Room 2124 Undergraduate Papers, Natural Sciences
Judges: Devesh Shukla (moderator), Jennifer Gill

1:40 Salami, Daniel; Ogbonnaya, Caleb; "Software as a Service: Code Cloud" (Michael Galloway)
1:55 Brown, Trevor "Virtual Lab" (Michael Galloway)
2:10 Palavra, Sanida; Huskey, Steve; Smith, Michael; "How do Chameleons Sense Vibrations? Microscopic Examination of Possible Sensory Structures" (Michael Smith)
2:25 Powers, Nathan; Srivastava, Ajay; "Involvement of JAK/STAT Pathway during Air Sac Primordia Development of *Drosophila melanogaster*" (Ajay Srivastava)
2:40 Hamilton, Luke "Prolongation of the Thymus Gland by Plant Extract" (Chandrakanth Emani)
2:55 Williams, Nicole "Expression of Cellulose-Digesting Enzymes for Plant Wall Degradation in Green Algae" (Sigrid Jacobshagen)

Session 47 Room 3002 Undergraduate Papers, Natural Sciences
Judges: Claire Rinehart (moderator), Stephen Norris

1:40 Noel, Paige "A Case Study of the Severe Weather Outbreak in Knoxville, Tennessee on April 27th, 2011" (Josh Durkee)
1:55 Lewis, Stevon; Morss, Steelman; Wulff, Andrew; "Petrogenesis of Chilean Lava Flows" (Andrew Wulff)
2:10 Askins, Morgan; Palkovic, Alexandra; Leppoo, Kelsy; Jones, Grace; "Effect of Feeding Teff Hay on Dry Matter Intake, Digestible Energy Intake and Resting Insulin/Glucose Concentration in Horses" (Jennifer Gill)
2:25 Price, Carson; French, Rachel; Boyareddygari, Karthik; Schugart, Richard; "Comparing Different Probability Distributions using Latin Hypercube Sampling with a Partial Rank Correlation Coefficient Analysis for a Wound-Healing Model" (Richard Schugart)
2:40 Spears, Kurtis; Wulff, Andrew; "Study of Water Systems and Contamination in South Central Kentucky" (Andrew Wulff)
2:55 Hunter, Caitlin; Wulff, Andrew; "Chert Artifact Analysis" (Andrew Wulff)

Session 48 Room 3004 Undergraduate Papers, Natural Sciences
Judges: Tim Hawkins (moderator), George Kontos

1:40 Aromiwura, Afolasayo; Fields, Christopher; Srivastava, Ajay; "Functional Characterization of a Basement Membrane Degrader and Its Role in the Development of *Drosophila melanogaster*" (Ajay Srivastava)
1:55 Kim, Barnabas; Kim, Do Hyun; "Engineered Zinc Finger Proteins Immobilized On Beads as a Novel Diagnostic Application for Detection of Pathogen-Specific DNA Sequences" (Moon Soo Kim)
2:10 Hobbs, Justin "An Investigation of the Driving Atmospheric Factors behind the Anticyclonic Tornadoes in Central Colorado on June 4th, 2015" (Joshua Durkee)

2:25 Boyareddygari, Vishnu "Parameter Sensitivity Analysis of a Partial Differential Equation Wound Neovascularization Model" (Richard Schugart)

Session 49 Room 3005 Undergraduate Papers, Humanities
Judges: Diane Lickenbrock (moderator), Cindy Houston

1:40 Knight, Joshua; Lasley, Scott; Stinnett, Brad; "Attitudes of WKU Faculty on Intercollegiate Athletics" (Scott Lasley)
1:55 Ellis, Shea "Hyper Masculinity in Film" (Jerod Hollyfield)
2:10 Jones, Andrew "The Geographic Perspective of Populist Attitudes in Eastern and Southern Germany" (Laura McGee)
2:25 Winkler, Adam "America Undressed; Waging War against Systematic Corruption in the Cinema of Oliver Stone" (Jerod Hollyfield)
2:40 Treumann, Stella "Taiwanese Perceptions of Refugees: Results of an Experimental Survey" (Timothy Rich)
2:55 Bragdon, Blake "'Just Can't Wait To Be King' – The Revitalization of the Walt Disney Company (1989-1999)" (Jerod Hollyfield)

Session 50 Fine Arts Center (FAC) rm 319 Undergraduate Performances, Interdisciplinary
Judges: Soyeon Kim (moderator), Molly Kerby

1:40 Rouse, Hadley; Kelly, Liza; "tears Breaking On Glass" (Liza Kelly)
1:55 Stewart, Patrick; Goulet, Christopher; "Embedded System for Transmission of Motion Data Over Long Ranges" (Kyle Moss)
2:10 Groves, Lauren "Learning to Listen for Success: Communication Studies Majors" (Bruce Crawley)
2:25 Manuel, Karly "Bridging the Pacific" (Marilee Salvator)

Session 51 Room 3024 Graduate Posters, Health and Human Services
Judges: Richard Dressler (moderator), Barbara Brindle

1. **Bezawada, Nandini**; Weisbrodt, David; Taylor, Ritchie; Hwang, Jooyeon; "Noise Exposure Levels among Bowling Green City Employees Operating Different Equipment" (Jooyeon Hwang)
2. **Kaur, Simrat** "Health-Related Quality of Life among Kentucky Adults with Diabetes Mellitus" (Colin Farrell)
3. **Thapa, Shila**; Taylor, Ritchie; Macy, Gretchen; Mac Cann, Charles; Golla, Vijay; Hwang, Joeeyeon; "Comparative Exposure Survey Study between Career and Volunteer Firefighter in Northwestern KY" (Jooyeon Hwang)
4. **Bagli, Sravya Patil** "Occurrence and Discharge of Pharmaceutical Waste in Water" (Elmer Gray)
5. **Bhatia, Gurpreet** "The Water Fluoridation Controversy: Do We Really Need It?" Darlene Shearer)

Session 52 Room 3024 Undergraduate Posters, Health and Human Services
Judges: Simon Funge (moderator), Carol Watwood

6. **Ringenberg, Gabrielle** "The Validity of Submaximal Exercise Testing in Obese Women" (Rachel Tinius)
7. **Keen, Keagan**; Tinius, Rachel; Maples, Jill; Cooley, Bailey; Olenick, Alyssa; Hoover, Don; Blankenship, Maire; "The Impact of an Acute Bout of High Intensity Exercise on Mood among Pregnant Women" (Jill Maples)
8. **Driskill, Sarah**; Tinius, Rachel; Hoover, Don; "A Pregnancy-specific Equation for Predicting Cardiorespiratory Fitness" (Rachel Tinius)
9. **Boisture, Maleah**; Ezekekwu, Emmanuel; Onan, Rachel; "Aging and Caregiver Issues Related to HIV Care in Tanzania" (William Mkanta)
10. **Tomko, Mason; Simpson, Olivia;** King, Rodney; Rinehart, Claire; Staples, Amanda; "Collection, Isolation, and Analysis of Arthrobacter Bacteriophages Birdperson and Djoodi" (Naomi Rowland)
11. **Mills, Morgan**; Tinius, Rachel; Olenick, Alyssa; Pearson, Regis; Shaker, Nuha; Oregon, Evie; Hoover, Don; "Sedentary Behavior Influence on Metabolism" (Jill Maples)

Session 53 Room 3024 Undergraduate Posters, Health and Human Services
Judges: Beth Norris (moderator), Trish Jaggers

12. **Phelps -Birdwhistell, Christy** "Is Alcohol Abuse More Prevalent in Combat Veterans with PTSD Compared to Non-Combat Veterans?" (Whitney Harper)
13. **Winklepleck, Tyler** "Quality Of Life after Spinal Cord Injury" (Dana Sullivan)
14. **McRoberts, Jordan; Jent, Morgan;** "Colors in the World of Healing" (Shelia Flener)
15. **Minto, Kelsey; Bowman, Sarah;** "Summer Feeding Programs: An Approach to Decrease Childhood Food Insecurity" (Whitney Harper)
16. **Johnson, Julia**; Pearson, Regis; Winchester, Lee; Olenick, Alyssa; Shaker, Nuha; Oregon, Evie; Maples, Jill; "The Effects of a High Fat Diet on Gene Expression in Lean and Obese Women" (Jill Maples)

Session 54 Room 3024 Undergraduate Posters, Natural Sciences
Judges: Cheryl Kirby-Stokes (moderator), Jim Fulkerson

17. **Mota, Steven** "Nashville's Rewind Museum" (Neal Downing)
18. **Lasley, Troy** "Worship and Refuge" (Neal Downing)
19. **Cruz, Linda** "A Narrative of Kentucky’s Top 10 Invasive Plants through Maps" (Amy Nemon)
20. **Freeman, Callie; Guernsey, Emily;** Rowland, Naomi; King, Rodney; Rinehart, Claire; Staples, Amanda; "Comparison of Pemberly and Jeggs: An Exploration of Bacteriophage Diversity" (Naomi Rowland)

21. **Hicks, Joshua; Wood, Michael; Roberts, John; Liu, Alen;** "Overhead Stacker-Type Crane Mast Rotate Drive Loading & Backlash Analysis in Logan Aluminum" (Morteza Nurcheshmeh)
22. **Joyce, Caitlyn** "Habitat for Humanity Community Center of Bowling Green/Warren County" (Neal Downing)

Session 55 Room 3024 Undergraduate Posters, Natural Sciences
Judges: Jean Gumirakiza (moderator), Jennifer Joe

23. **Reece, Colin; Weaver, Eric; White, William;** "Wood Powered Lawnmower" (Chris Byrne)
24. **Conley, Hunter** "Less is More: Incorporating 'Tiny Living' in Bowling Green's T.I.F. District" (Neal Downing)
25. **Sloan, Caleb** "National Internment Museum" (Neal Downing)
26. **Carrender, Mark** "Synthesis of Heteropolyoxoniobate using a Water-Soluble Nickel-Substituted Decaniobate Ions" (Bangbo Yan)
27. **Lasley, Nathan** "Comparing Building Modeling Software to the Energy Record of a Preexisting Structure" (Robert Choate)
28. **Young, Taylor** "Synthesis of Copper Vanadate as a Battery Electrode Material" (Bangbo Yan)

Session 56 Room 3024 Undergraduate Posters, Natural Sciences
Judges: Rodney King (moderator), Donna Kasznel

29. **Smith, Skyler**; Kholikov, Khomidkhodza; Seyitliyev, Dovletgeldi; Thomas, Zachary; Er, Ali; "Pulsed Laser Synthesis of Graphene Quantum Dots as Effective Biocompatible Photodynamic Agents" (Ali Er)
30. **Weaver, Eric**; Stone, Martin; Biddle, Matthew; "Developing A Research Testbed" (Gordon Smith)
31. **French, Caitlyn**; Trimboli, Shannon; "A Preliminary Investigation into the Source of Micro-Climate Changes Observed in the Lower Passages of Mammoth Cave" (Shannon Trimboli)
32. **Taylor, Carly** "Mechanochemical Synthesis of Platinum Compounds" (Kevin Williams)
33. **Brown, Katherine**; Gani, Nahid; "Understanding Tectonic Processes from the Distribution Pattern and Interaction of Strike-Slip Faults and En Echelon: A New Study from the Solis Planum and Lunae Planum Regions of the Valles Marineris Plateaus in Mars" (Nahid Gani)
34. **Love, Katherine** "Assessing the Biological and Economic Impact of Ash Trees at the Baker Arboretum using Geographic Information Systems" (Martin Stone)

Session 57 Room 3024 Undergraduate Posters, Natural Sciences
Judges: Amy McGough (moderator), Morteza Nurchesmeh

35. **Wilkerson, Phillip**; Gibson, Steven; Boyles, Jason; Cantrell, Henry; Hicks, Stacy; Harper, Doug; Carter, Trason; "A Hands-On Radio Telescope for WKU" (Steven Gibson)

36. **Bruns, Brody; Ogbonnaya, Caleb;** "Expanding the Accessibility of Conventional Smart Home Systems" (Michael Galloway)
37. **Grant, Byron**; Seyitliyev, Dovletgeldi; Kholikov, Khomidkhodza; Thomas, Zachary; Er, Ali; "Recoverable Stress Induced Two-Way Shape Memory Effect on Niti Surface Using Laser-Produced Shock Wave" (Ali Er)
38. **Fernando, Jeraan; Naidugari, Janki;** ; King, Rodney; Rinehart, Claire; Staples, Amanda; "The Isolation and Characterization of Phages Ruvinda and Haiitspooja" (Naomi Rowland)
39. **Hinton, Will; Vanmeter, Nicholas;** "Discovering Wolbachia in Common Insects" (Naomi Rowland)
40. **Johnson, Nicholas** "Phylogenetic Evolution of the GAP Gene from Seven Different Leafy Green Plants" (Chandrakanth Emani)

Session 58 Room 3024 Undergraduate Posters, Interdisciplinary
Judges: Roxanne Spencer (moderator), Audrey Robinson-Nkongola

41. **Adkins, Dane**; Redifer, Jenni; "Jamming Out While Studying: Impacts of Musical Components on Retrieval Performance" (Jenni Redifer)
42. **Powers, Jeffrey** "The Association between Nonsuicidal Self-Injury, Suicide Attempts, and Binge-Drinking in College Students" (Amy Brausch)
43. **Alqahtani, Mohammed** "The Space of a Better Environment" (Neal Downing)
44. **Gilliam, Ashley** "How Muslims are Viewed by Majority Populations in the UK: A Qualitative Framework" (Ashley Stinnett)
45. **Mathews, Rilee** "The Effects of Bingocize® on Cognitive Aging: A Health Promotion Intervention" (Matthew Shake)

Session 59 Room 3024 Undergraduate Posters, Natural Sciences and Interdisciplinary
Judges: Anne Heintzman (moderator), Elisabeth Knight

46. **Boone, Ryan** "Improving Water Quality through Data Mining Application" (Leyla Zhuhadar)
47. **Morris, Julius** "Destruction to Development" (Neal Downing)
48. **Caro, Cara** "Interlayer Bond Strength of Abs Plastic" (Gordon Smith)
49. **Ryumae, Ken** "Computing an Algorithm to Detect Three Dimensional Objects in Space" (Qi Li)
50. **Carrico, Christopher**; Hahn, Lance; "A Natural Language Approach to Email Encryption" (Lance Hahn)
51. **Wellum, Joshua; Frizzell, Colin; Hudson, Devin; Alolayan, Abdulaziz;** "ME 412 Halton Flow Stand Project" (Robert Choate)

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